ABSTRACT

A composite nanoparticle makes it possible to significantly lower the temperature to separate an organic substance from a core and uniformly sinter the cores, and can be applied to bonding that replaces soldering. The composite nanoparticle includes a metal component as a core, and an organic substance surrounding the metal component and bonded to it by physical adsorption. The composite nanoparticles can be produced by allowing an inorganic metal salt and an organic material to coexist, and heating the inorganic metal salt and the organic material to a predetermined temperature and holding them at the temperature for a predetermined time so that the inorganic metal salt is decomposed to produce metal nanoparticles. Thus, an organic substance is bonded to the metal nanoparticles by physical adsorption without forming an organometallic compound through a reaction between the metal nanoparticles and the organic substance.